

INDEX OF PLANS

SHEET No.	DESCRIPTION
1	TITLE AND LOCATION MAP
2	TYPICAL CROSS SECTIONS
3	CONSTRUCTION DETAILS
4	CONSTRUCTION AREA SIGNS
5-7	SUMMARY OF QUANTITIES
8-9	ELECTRICAL PLANS
10-17	REVISED AND NEW STANDARD PLANS

THE STANDARD PLANS LIST APPLICABLE TO THIS CONTRACT IS INCLUDED IN THE NOTICE TO BIDDERS AND SPECIAL PROVISIONS BOOK.

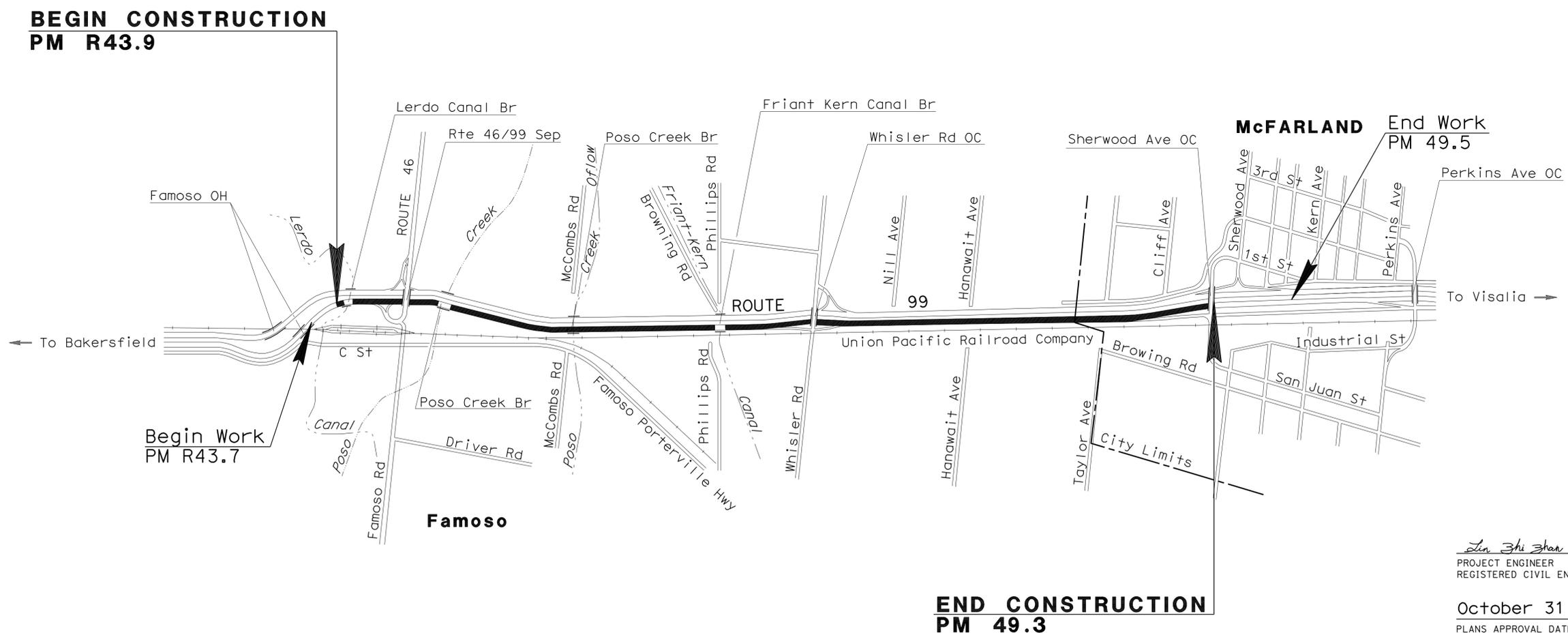
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

PROJECT PLANS FOR CONSTRUCTION ON  
STATE HIGHWAY  
IN KERN COUNTY  
NEAR FAMOSO AND IN McFARLAND  
FROM 0.4 MILE SOUTH OF ROUTE 46/99 SEPARATION  
TO SHERWOOD AVENUE OVERCROSSING

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99	R43.9/49.3	1	17

LOCATION MAP



PROJECT MANAGER  
VICTOR SHAW

DESIGN ENGINEER  
RENE SANCHEZ

*Lin Zhi Zhan* 10-21-11  
PROJECT ENGINEER DATE  
REGISTERED CIVIL ENGINEER

October 31, 2011  
PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO BIDDERS."

NO SCALE

CONTRACT No.	<b>06-ON1704</b>
PROJECT ID	<b>0600020444</b>

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99	R43.9/49.3	2	17

<i>Zhi Zhan</i>	10-21-11
REGISTERED CIVIL ENGINEER	DATE
10-31-11	
PLANS APPROVAL DATE	

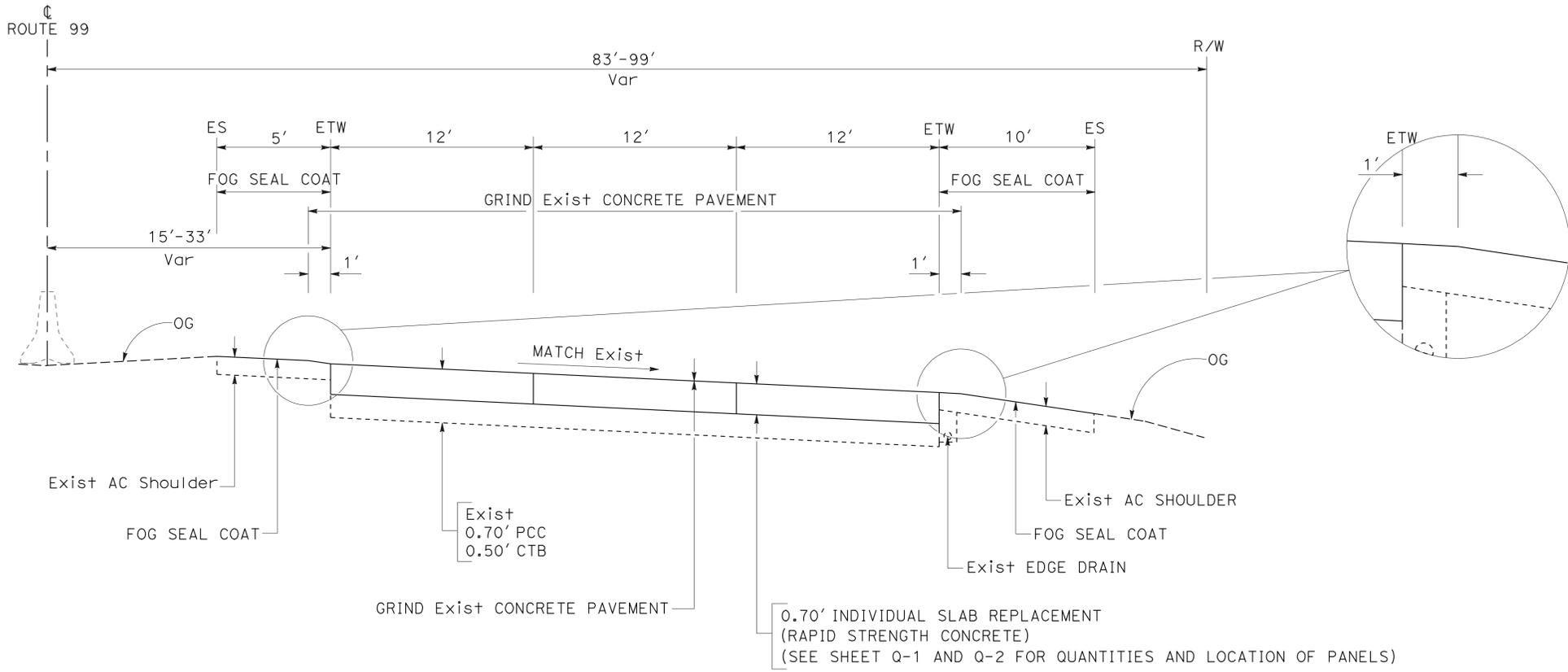
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**NOTES:**

- DIMENSIONS OF THE PAVEMENT STRUCTURES (STRUCTURAL SECTION) ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
**PAVEMENT PRESERVATION**  
 FUNCTIONAL SUPERVISOR: RENE SANCHEZ  
 CALCULATED/DESIGNED BY: ZHI ZHAN LIN  
 CHECKED BY: RENE SANCHEZ  
 REVISIONS: REVISOR: RENE SANCHEZ, DATE: 10-21-11



**ROUTE 99**  
R43.9/49.3  
NORTHBOUND

**TYPICAL CROSS SECTION**  
NO SCALE  
**X-1**

LAST REVISION: 10-21-11  
 DATE PLOTTED => 03-NOV-2011  
 TIME PLOTTED => 16:06

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99	R43.9/49.3	3	17

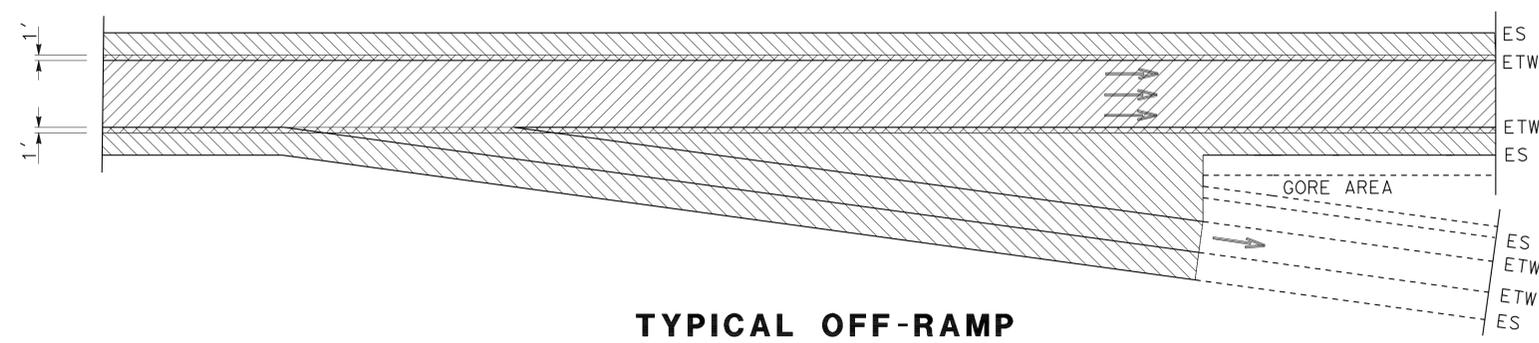
  

<i>Zhi Zhan Lin</i>	10-21-11
REGISTERED CIVIL ENGINEER	DATE
10-31-11	
PLANS APPROVAL DATE	

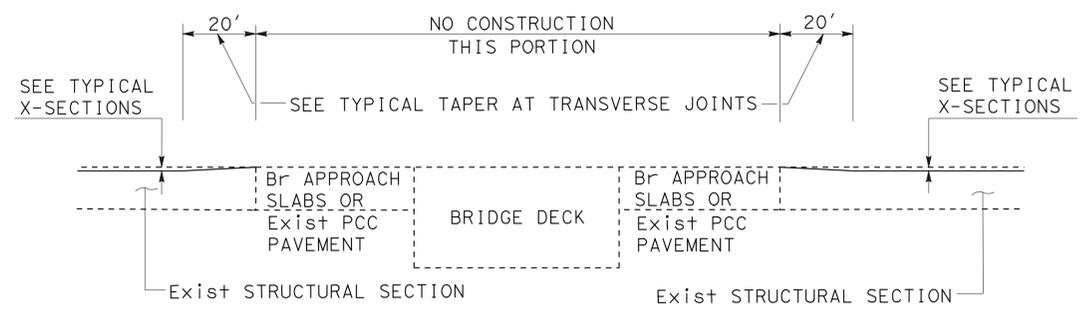
REGISTERED PROFESSIONAL ENGINEER  
**ZHI ZHAN LIN**  
 No. 60881  
 Exp. 2-31-12  
 CIVIL  
 STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

**LEGEND:**

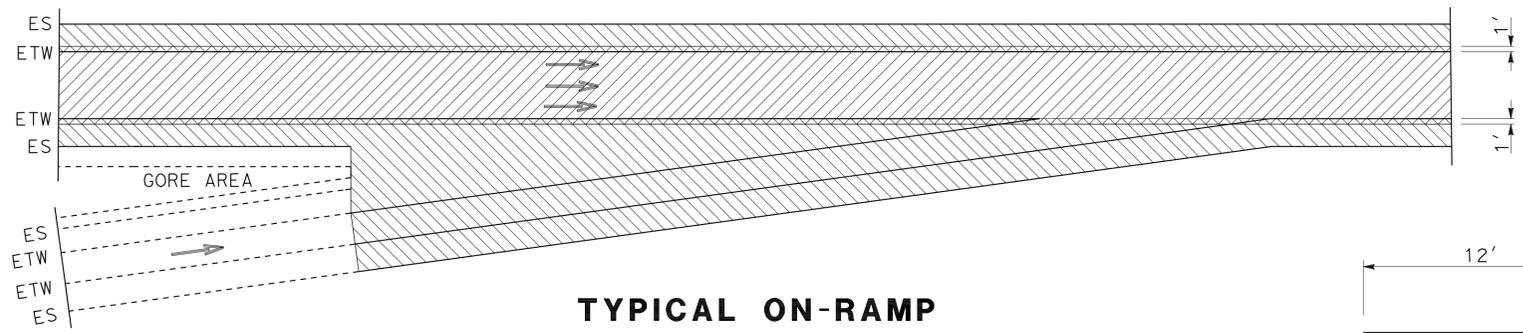


**TYPICAL OFF-RAMP**

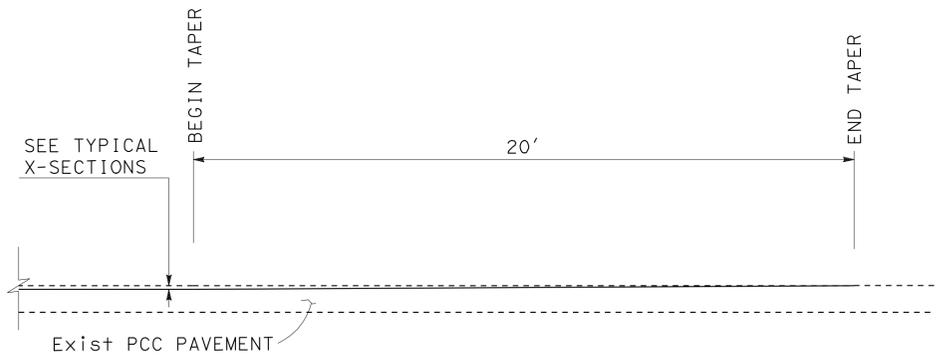


**TYPICAL TRANSITION AT BRIDGE**

PM R43.93 PM 44.54, PM 46.32

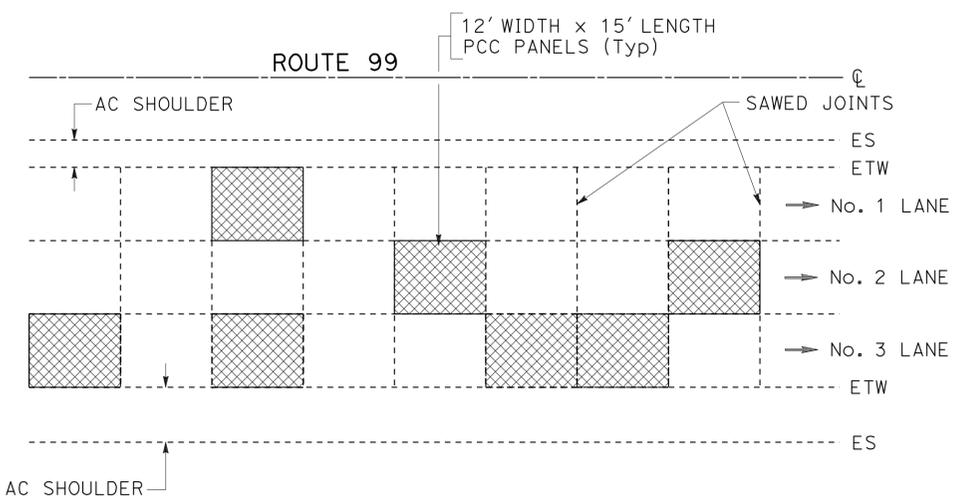


**TYPICAL ON-RAMP**

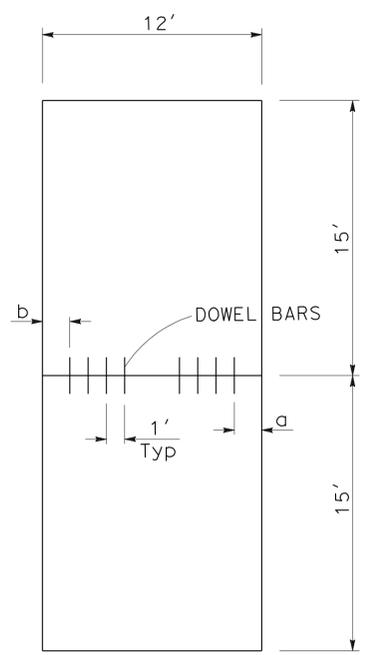


**TYPICAL TAPER AT TRANSVERSE JOINTS**

PM R43.9, PM 44.5, PM 46.3, PM 49.3

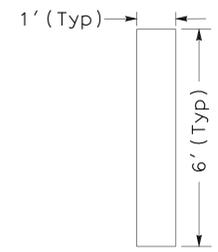


**TYPICAL REPLACE CONCRETE PAVEMENT PLAN VIEW**



**INDIVIDUAL SLAB REPLACEMENT (RAPID STRENGTH CONCRETE) DOWEL BARS LOCATION (TYPE I)**

**CHP MARKING DETAIL**



**CONSTRUCTION DETAILS**

**C-1**

NO SCALE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 PAVEMENT PRESERVATION  
 FUNCTIONAL SUPERVISOR: RENE SANCHEZ  
 CALCULATED/DESIGNED BY: RENE SANCHEZ  
 CHECKED BY: RENE SANCHEZ  
 ZHI ZHAN LIN  
 REVISOR: RENE SANCHEZ  
 REVISED BY: RENE SANCHEZ  
 DATE REVISED:

## STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SIGN No.	SIGN CODE	PANEL SIZE	SIGN MESSAGE	No. OF POST AND SIZE	No. OF SIGNS
(A)	W20-1	48" x 48"	ROAD WORK AHEAD	1- 6" x 6"	1
(B)	W20-1	36" x 36"	ROAD WORK AHEAD	1- 4" x 6"	2
(C)	G20-2	36" x 18"	END ROAD WORK	1- 4" x 4"	1

NOTE: SIGN LOCATIONS SHOWN ARE APPROXIMATE.  
EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99	R43.9/49.3	4	17

*Zhi Zhan* 10-21-11  
REGISTERED CIVIL ENGINEER DATE

10-31-11  
PLANS APPROVAL DATE

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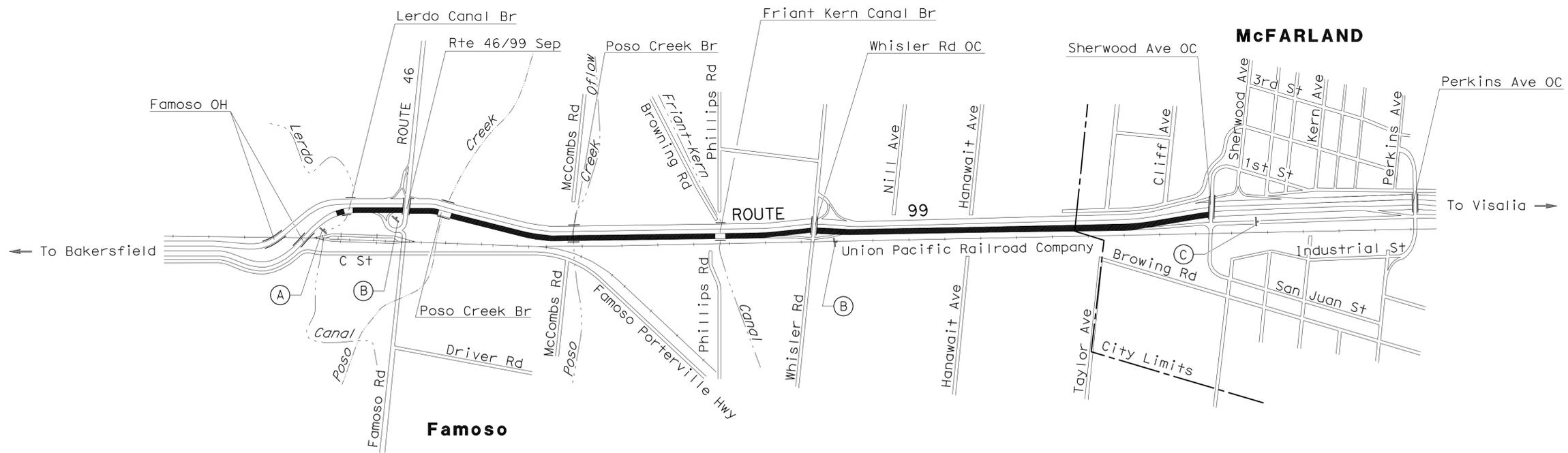
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
**PAVEMENT PRESERVATION**

FUNCTIONAL SUPERVISOR  
 RENE SANCHEZ

CALCULATED-DESIGNED BY  
 CHECKED BY

ZHI ZHAN LIN  
 RENE SANCHEZ

REVISED BY  
 DATE REVISED



APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

**CONSTRUCTION AREA SIGNS**  
**CS-1**  
 NO SCALE

LAST REVISION     
 DATE PLOTTED => 03-NOV-2011     
 TIME PLOTTED => 16:06

### ROADWAY QUANTITIES

LOCATION	POST MILE *	No. OF PANELS			THICKNESS	INDIVIDUAL SLAB REPLACEMENT (RAPID STRENGTH CONCRETE)
		R-1	R-2	R-3		
						CY
	R43.900		1		0.70'	4.7
	R43.902		1		0.70'	4.7
	R43.905		0.5		0.70'	2.3
	R43.908		1		0.70'	4.7
	R43.913		1		0.70'	4.7
	R43.915		1		0.70'	4.7
	R43.919	0.5	1		0.70'	7.0
	R43.921		1		0.70'	4.7
	R43.927	0.5	1		0.70'	7.0
	R43.928		1		0.70'	4.7
	R43.931	0.5		1	0.70'	7.0
	R43.936		1		0.70'	4.7
	R43.940			1	0.70'	4.7
	R43.943			1	0.70'	4.7
	R43.945		1		0.70'	4.7
	R43.948		0.5		0.70'	2.3
	43.954		1.5		0.70'	7.0
	43.964		1		0.70'	4.7
	43.965		1		0.70'	4.7
	43.966			1	0.70'	4.7
	43.986			1	0.70'	4.7
	43.969	0.5			0.70'	2.3
	44.003			1	0.70'	4.7
	44.032			0.5	0.70'	2.3
	44.110			1	0.70'	4.7
	44.200			1	0.70'	4.7
	44.202			1	0.70'	4.7
	44.205			1	0.70'	4.7
	44.232			1	0.70'	4.7
	44.234			1	0.70'	4.7
	44.236			1	0.70'	4.7
	44.239			1	0.70'	4.7
	44.241			1	0.70'	4.7
	44.270			1	0.70'	4.7
	44.356			1	0.70'	4.7
	44.358			1	0.70'	4.7
	44.361			1	0.70'	4.7
	44.419			0.5	0.70'	2.3
	44.241			1	0.70'	4.7
	44.243			1	0.70'	4.7
SubTotal 1						185.2
SubTotal 2						60.6
SHEET TOTAL Q-1						245.8

\* EXACT LOCATION TO BE DETERMINED BY THE ENGINEER.

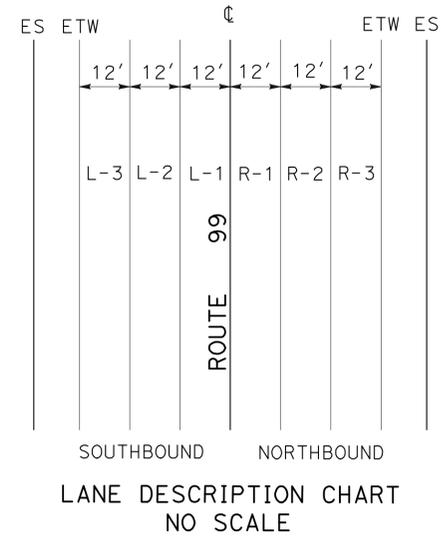
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99	R43.9/49.3	5	17

10-21-11  
REGISTERED CIVIL ENGINEER DATE

10-31-11  
PLANS APPROVAL DATE



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### ROADWAY QUANTITIES

LOCATION	POST MILE *	No. OF PANELS			THICKNESS	INDIVIDUAL SLAB REPLACEMENT (RAPID STRENGTH CONCRETE)
		R-1	R-2	R-3		
						CY
	44.457			0.5	0.70'	2.3
	44.460			1	0.70'	4.7
	44.462			1	0.70'	4.7
	44.464			1	0.70'	4.7
	44.467			1	0.70'	4.7
	44.471			1	0.70'	4.7
	44.536			1	0.70'	4.7
	44.538			0.5	0.70'	2.3
	44.616			1	0.70'	4.7
	44.619			0.5	0.70'	2.3
	44.621			0.5	0.70'	2.3
	44.636			1	0.70'	4.7
	44.795			0.5	0.70'	2.3
	44.803			0.5	0.70'	2.3
	44.900	0.5			0.70'	2.3
	44.934			0.5	0.70'	2.3
	45.075	0.5			0.70'	2.3
	45.078	0.5			0.70'	2.3
SubTotal 2						60.6

\* EXACT LOCATION TO BE DETERMINED BY THE ENGINEER.

## SUMMARY OF QUANTITIES Q-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Ker	99	R43.9/49.3	6	17

*Zhi Zhan Lin* 10-21-11  
 REGISTERED CIVIL ENGINEER DATE

10-31-11  
 PLANS APPROVAL DATE

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 COPIES OF THIS PLAN SHEET.

### ROADWAY QUANTITIES

LOCATION	POST MILE *	No. OF PANELS			THICKNESS	INDIVIDUAL SLAB REPLACEMENT (RAPID STRENGTH CONCRETE)  CY
		R-1	R-2	R-3		
	45.085	0.5			0.70'	2.3
	45.090	0.5			0.70'	2.3
	45.116	0.5			0.70'	2.3
	45.148	1			0.70'	4.7
	45.160	0.5			0.70'	2.3
	45.276	0.5			0.70'	2.3
	45.295	0.5			0.70'	2.3
	45.325	0.5			0.70'	2.3
	45.336	0.5			0.70'	2.3
	45.379	0.5			0.70'	2.3
	45.397	0.5			0.70'	2.3
	45.413	0.5			0.70'	2.3
	45.595	0.5			0.70'	2.3
	45.622			1	0.70'	4.7
	45.625			1	0.70'	4.7
	45.628			1	0.70'	4.7
	45.630			0.5	0.70'	2.3
	45.667			1	0.70'	4.7
	45.680	0.5			0.70'	2.3
	45.700	0.5			0.70'	2.3
	45.872	0.5			0.70'	2.3
	45.898	0.5			0.70'	2.3
	45.969	0.5			0.70'	2.3
	45.980	0.5			0.70'	2.3
	46.068	0.5			0.70'	2.3
	46.071	0.5			0.70'	2.3
	46.103	0.5			0.70'	2.3
	46.105	0.5			0.70'	2.3
	46.113	0.5			0.70'	2.3
	46.196	0.5			0.70'	2.3
	46.234			0.5	0.70'	2.3
	46.356	1			0.70'	4.7
	46.360	1			0.70'	4.7
	46.372			1	0.70'	4.7
	46.423	1			0.70'	4.7
	46.430			0.5	0.70'	2.3
	46.437	0.5			0.70'	2.3
	46.735			1	0.70'	4.7
	46.752	1			0.70'	4.7
	47.002			1	0.70'	4.7
SubTotal 1						120.8

\* EXACT LOCATION TO BE DETERMINED BY THE ENGINEER.

### ROADWAY QUANTITIES

LOCATION	POST MILE *	No. OF PANELS			THICKNESS	INDIVIDUAL SLAB REPLACEMENT (RAPID STRENGTH CONCRETE)  CY
		R-1	R-2	R-3		
	47.141	1			0.70'	4.7
	47.223			1	0.70'	4.7
	47.940	0.5			0.70'	2.3
	47.954	1			0.70'	4.7
	48.059			0.5	0.70'	2.3
	48.100	0.5			0.70'	2.3
	48.191	0.5			0.70'	2.3
	48.142	0.5			0.70'	2.3
	48.213	0.5			0.70'	2.3
	48.228	0.5			0.70'	2.3
	48.279	0.5			0.70'	2.3
	48.368	0.5			0.70'	2.3
	48.382	0.5			0.70'	2.3
	48.391	0.5			0.70'	2.3
	48.461	0.5			0.70'	2.3
	48.566	0.5			0.70'	2.3
	48.632	0.5			0.70'	2.3
	48.635	0.5			0.70'	2.3
	48.682	0.5			0.70'	2.3
	48.696	0.5			0.70'	2.3
	48.705	0.5			0.70'	2.3
	48.735	1			0.70'	4.7
	48.741	0.5			0.70'	2.3
	48.774	0.5			0.70'	2.3
	48.868	0.5			0.70'	2.3
	49.266			1	0.70'	4.7
	49.269			1	0.70'	4.7
	49.272			1	0.70'	4.7
SubTotal 2						81.2
SubTotal 1						120.8
FROM Q-1						245.8
TOTAL						447.8

\* EXACT LOCATION TO BE DETERMINED BY THE ENGINEER.

## SUMMARY OF QUANTITIES Q-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**PAVEMENT PRESERVATION**  
 ZHI ZHAN LIN  
 RENE SANCHEZ  
 REVISIONS: 10-21-11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99	R43.9/49.3	7	17

*Zhi Zhan* 10-21-11  
 REGISTERED CIVIL ENGINEER DATE

10-31-11  
 PLANS APPROVAL DATE

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**ROADWAY QUANTITIES**

LOCATION	GRIND EXISTING CONCRETE PAVEMENT	ASPHALTIC EMULSION (FOG SEAL COAT)
	SQYD	TON
PM R43.9/49.3 NORTHBOUND	120,000	23
TOTAL	120,000	23

**PAVEMENT DELINEATION QUANTITIES**

LOCATION	DETAIL	THERMOPLASTIC TRAFFIC STRIPE					PAVEMENT MARKER (RETROREFLECTIVE)		REMOVE THERMOPLASTIC PAVEMENT MARKING	THERMOPLASTIC PAVEMENT MARKING	
		4" YELLOW	4" WHITE	4" WHITE (BROKEN 36-12)	4" WHITE (BROKEN 17-7)	8" WHITE	TYPE G ONE-WAY CLEAR	TYPE H ONE-WAY YELLOW		DESCRIPTION	SQFT
		LF	LF	LF	LF	LF	EA	EA		SQFT	SQFT
PM R43.9/49.3 NORTHBOUND	8				320				24	4-CHP MARKING (1.0' x 6.0')	24
	12			56,604			1,188				
	25	28,302						594			
	27B		31,200								
	36 36A					1,950 420	85 20				
SUBTOTAL		28,302	31,200	56,604	320	2,370	1,293	594			
TOTAL		59,502		56,604	320	2,370	1,887		24		24

**SUMMARY OF QUANTITIES  
Q-3**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 PAVEMENT PRESERVATION  
 FUNCTIONAL SUPERVISOR  
 RENE SANCHEZ  
 CALCULATED-DESIGNED BY  
 CHECKED BY  
 RENE SANCHEZ  
 ZHI ZHAN LIN  
 RENE SANCHEZ  
 REVISED BY  
 DATE REVISED

LAST REVISION     
 DATE PLOTTED => 03-NOV-2011     
 TIME PLOTTED => 16:06

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99	R43.9/49.3	8	17

<i>David C. Arias</i>	10-21-11
REGISTERED ELECTRICAL ENGINEER	DATE
10-31-11	
PLANS APPROVAL DATE	

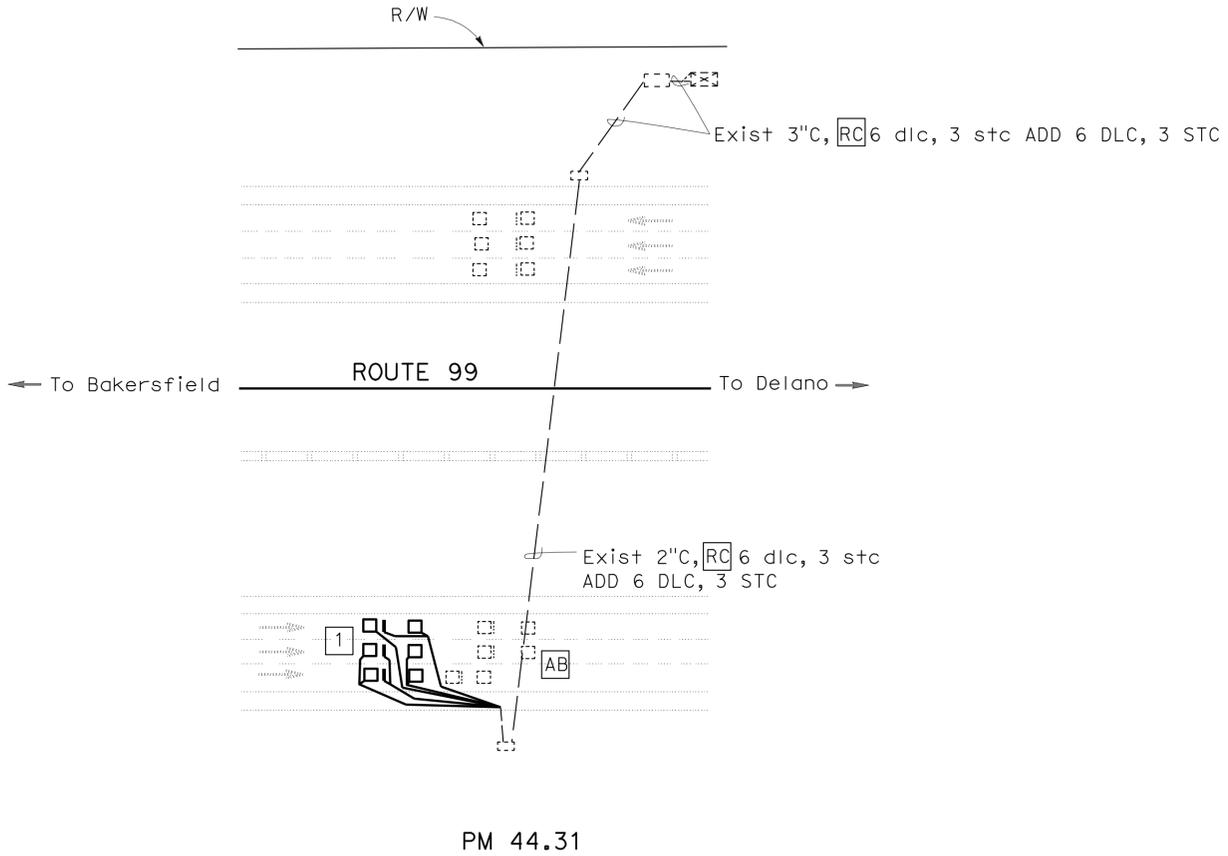
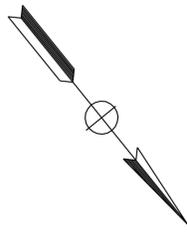
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**NOTE:**  
FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

**LEGEND:**  
1 LOOP DETECTORS AND PIEZO AXLE SENSORS SHALL BE INSTALLED AND IDENTIFIED AS SHOWN IN DETAILS A AND B ON SHEET E-2.

**ABBREVIATIONS:**  
STC SCREENED TRANSMISSION CABLE  
stc Exist SCREENED TRANSMISSION CABLE



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	ARTURO ARIAS	REVISOR	DATE
<b>Caltrans</b> MAINTENANCE DESIGN	DAVID C. ARIAS	DESIGNER	
CONSULTANT - FUNCTIONAL SUPERVISOR	FRANK GONZALEZ	CHECKED BY	
CALCULATED - DESIGNED BY		DESIGNED BY	

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

**MODIFY VEHICLE CLASSIFICATION STATION**  
**E-1**

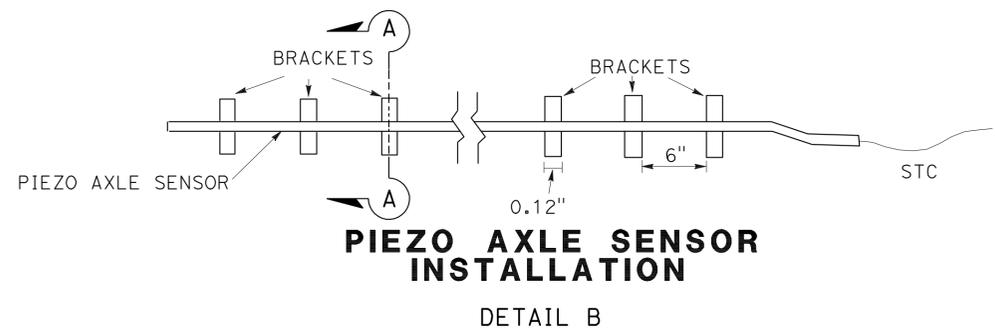
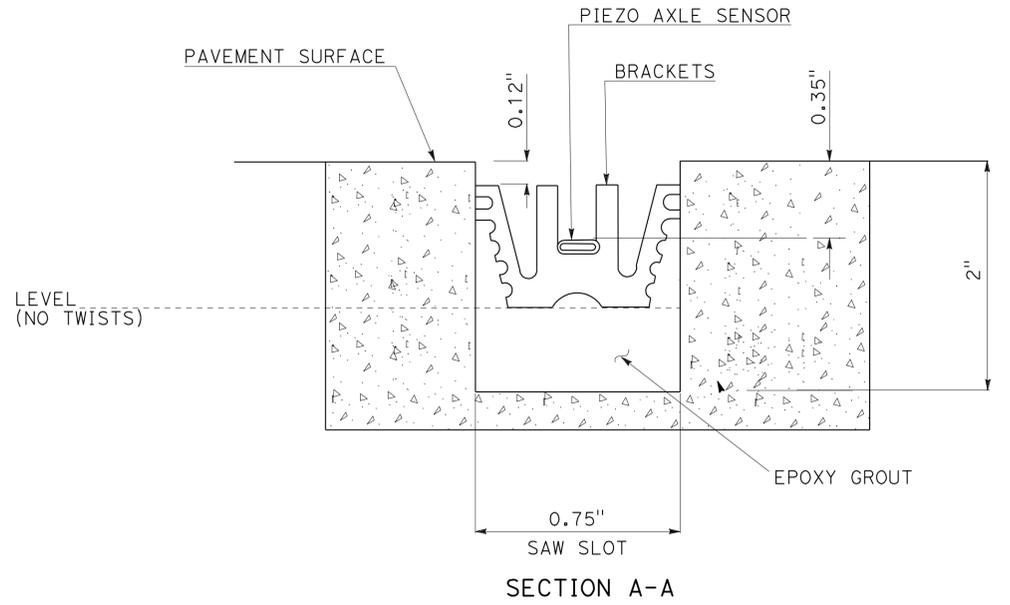
SCALE: 1"=50'

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99	R43.9/49.3	9	17

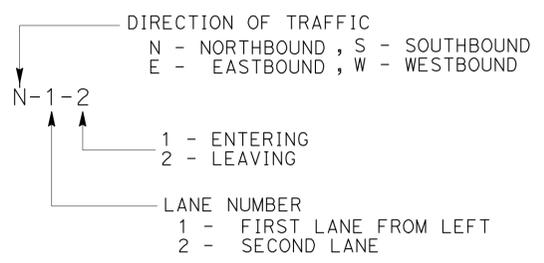
David C. Arias 10-21-11  
 REGISTERED ELECTRICAL ENGINEER DATE  
 10-31-11  
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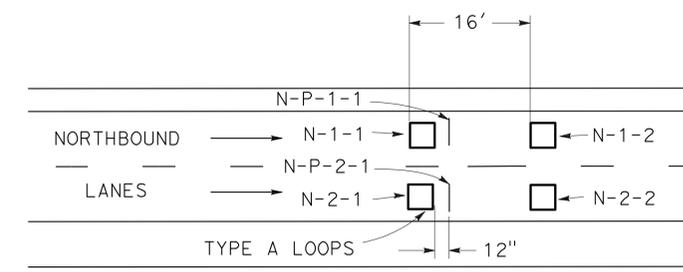
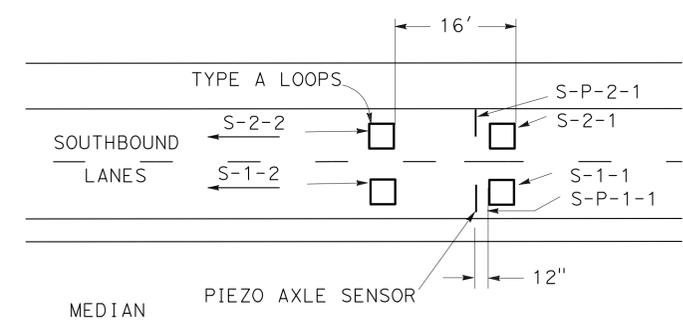
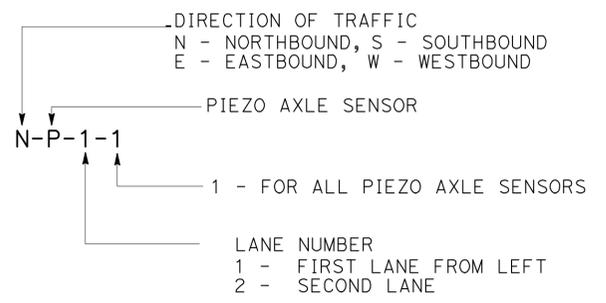
REGISTERED PROFESSIONAL ENGINEER  
 David C. Arias  
 No. 15559  
 Exp. 12/31/11  
 ELECTRICAL  
 STATE OF CALIFORNIA



**INDUCTIVE LOOP DETECTOR  
SENSOR IDENTIFICATION**



**PIEZO AXLE SENSOR IDENTIFICATION**



**LOOP DETECTOR AND PIEZO AXLE SENSOR  
PLACEMENT AND IDENTIFICATION  
DETAIL A**

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

**MODIFY VEHICLE CLASSIFICATION STATION  
E-2**

NO SCALE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 ARTURO ARIAS  
 DAVID C. ARIAS  
 CALCULATED-DESIGNED BY  
 CHECKED BY  
 CONSULTANT - FUNCTIONAL SUPERVISOR  
 FRANK GONZALEZ  
 DESIGN

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Ker	99	R43.9/49.3	10	17

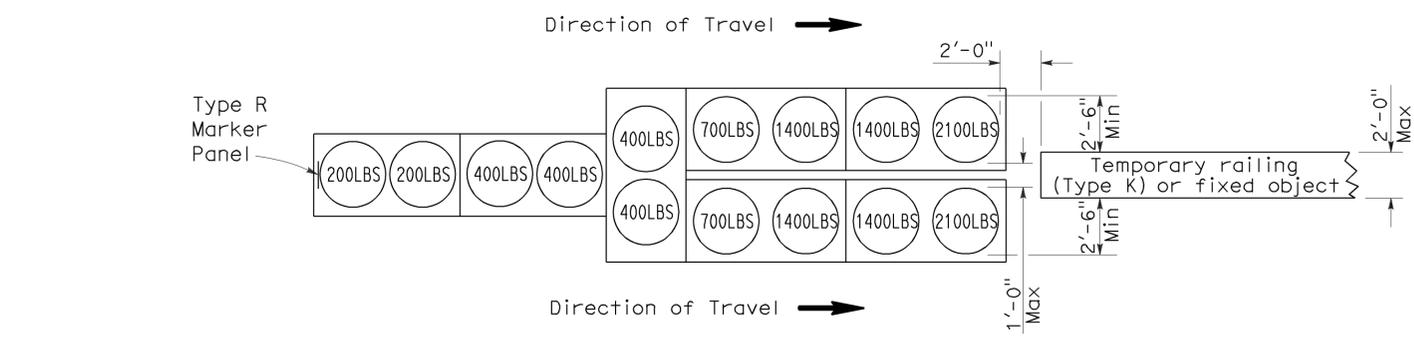
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

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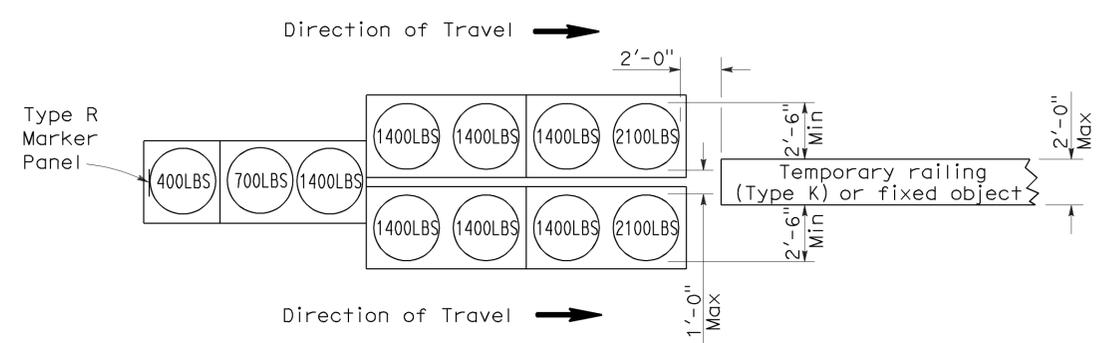
REGISTERED PROFESSIONAL ENGINEER  
*Randell D. Hiatt*  
No. C50200  
Exp. 6-30-09  
CIVIL  
STATE OF CALIFORNIA

To accompany plans dated 10-31-11



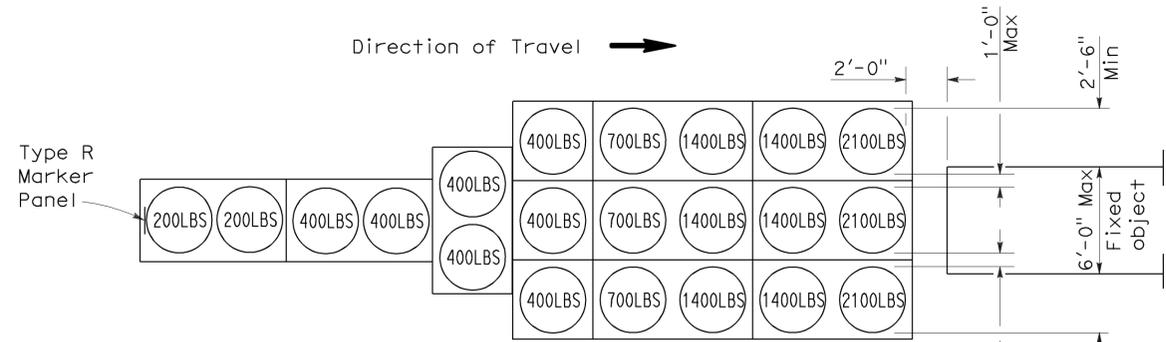
**ARRAY 'TU14'**

Approach speed 45 mph or more



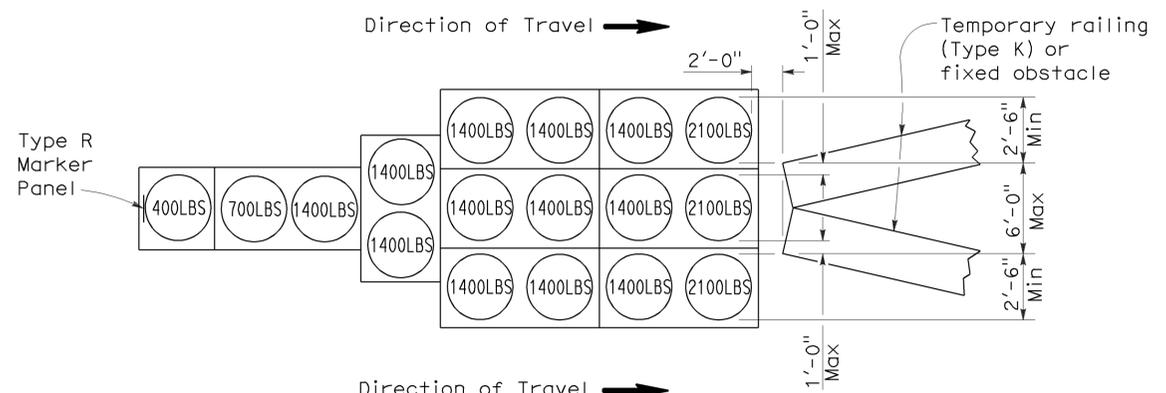
**ARRAY 'TU11'**

Approach speed less than 45 mph



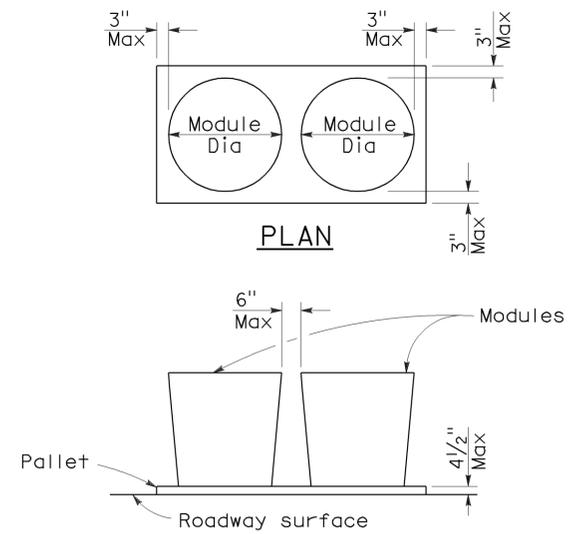
**ARRAY 'TU21'**

Approach speed 45 mph or more



**ARRAY 'TU17'**

Approach speed less than 45 mph



**CRASH CUSHION PALLET DETAIL**  
See Note 7

**NOTES:**

1. (XXX) Indicates sand filled module location and weight of sand in pounds for each module. Module spacing is based on the greater diameter of the module.
2. All sand weights are nominal.
3. Temporary crash cushion arrays shall not encroach on the traveled way.
4. Place the top of Type R marker panel 1" below the module lid.
5. Refer to Standard Plan A73B for marker details.
6. Approach speeds indicated conform to NCHRP 350 Report criteria.
7. Use of pallets is optional.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**TEMPORARY CRASH CUSHION,  
SAND FILLED  
(UNIDIRECTIONAL)**

NO SCALE

RSP T1A DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN T1A  
DATED MAY 1, 2006 - PAGE 211 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP T1A**

2006 REVISED STANDARD PLAN RSP T1A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
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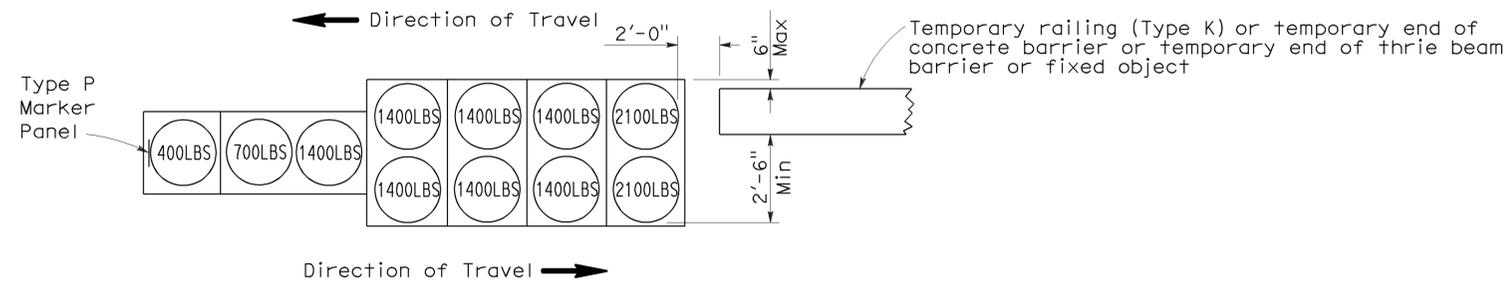
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

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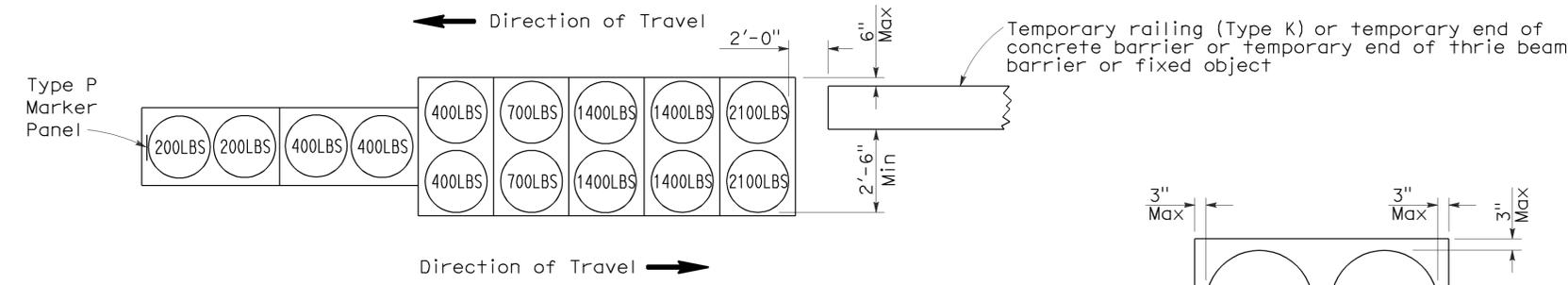
To accompany plans dated 10-31-11

2006 REVISED STANDARD PLAN RSP T1B



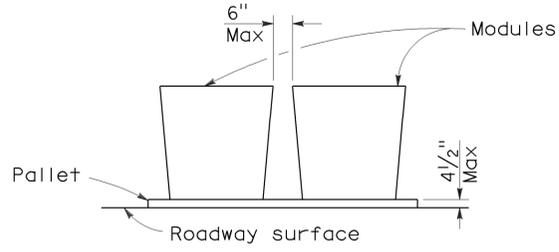
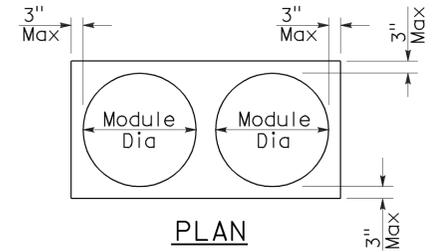
**ARRAY 'TB11'**

Approach speed less than 45 mph



**ARRAY 'TB14'**

Approach speed 45 mph or more



**CRASH CUSHION PALLET DETAIL**  
See Note 7

**NOTES:**

1. (XXX) Indicates sand filled module location and weight of sand in pounds for each module. Module spacing is based on the greater diameter of the module.
2. All sand weights are nominal.
3. Temporary crash cushion arrays shall not encroach on the traveled way.
4. Place the Type P marker panel so that the bottom of the panel rests upon the pallet.
5. Refer to Standard Plan A73B for marker details.
6. Approach speeds indicated conform to NCHRP 350 Report criteria.
7. Use of pallets is optional.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**TEMPORARY CRASH CUSHION,  
SAND FILLED  
(BIDIRECTIONAL)**  
NO SCALE

RSP T1B DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN T1B  
DATED MAY 1, 2006 - PAGE 212 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP T1B**

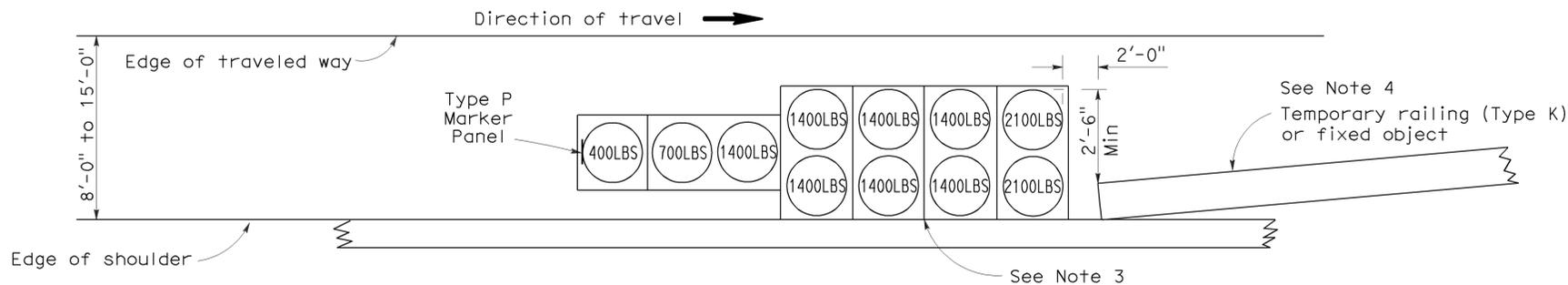
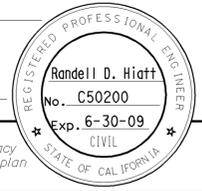
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Ker	99	R43.9/49.3	12	17

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

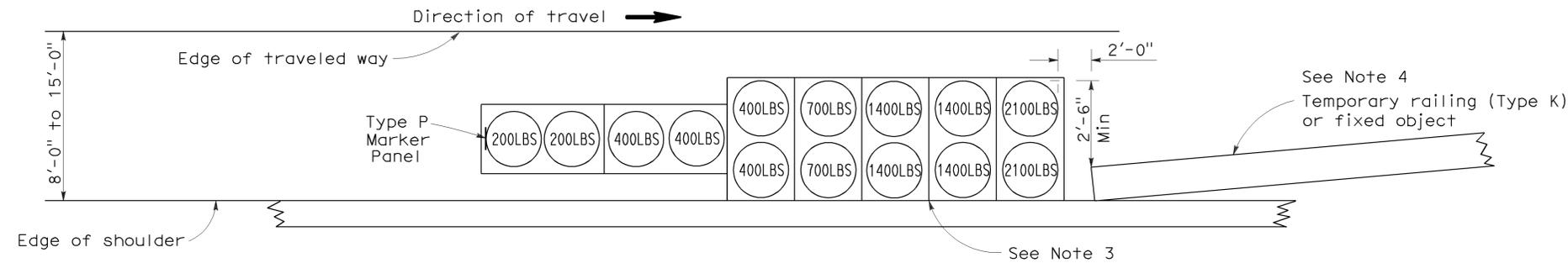
June 6, 2008  
PLANS APPROVAL DATE

*The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*

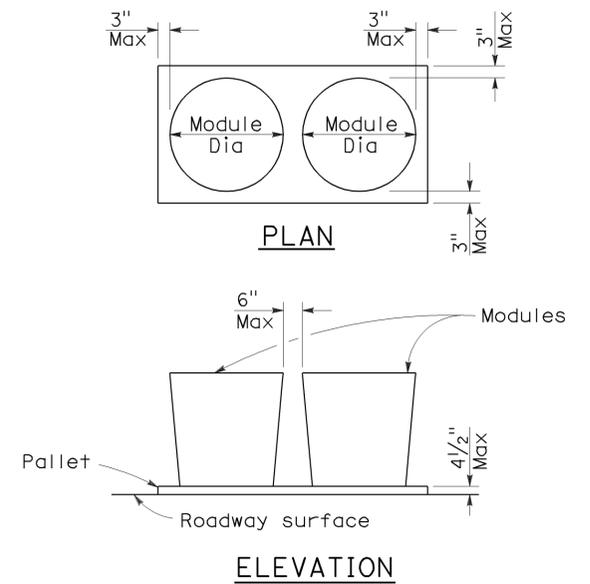
To accompany plans dated 10-31-11



**ARRAY 'TS11'**  
Approach speed less than 45 mph  
See Note 9



**ARRAY 'TS14'**  
Approach speed 45 mph or more  
See Note 9



**CRASH CUSHION PALLET DETAIL**  
See Note 11

**NOTES:**

- (XXX) Indicates sand filled module location and weight of sand in pounds for each module. Module spacing is based on the greater diameter of the module.
- All sand weights are nominal.
- The temporary crash cushion arrays shown on this plan shall be used only in locations where there will be traffic on one side of the temporary crash cushion array.
- If the fixed object or approach end of the temporary railing is less than 15'-0" from the edge of traveled way, a temporary crash cushion is required in a construction or work zone.
- Temporary crash cushion arrays shall not encroach on the traveled way.
- Arrays for median shoulders shall conform to details shown on this plan for outside shoulders.
- Place the Type P marker panel so that the bottom of the panel rests upon the pallet and faces traffic.
- Refer to Standard Plan A73B for marker details.
- For shoulder widths less than 8'-0", appropriate approved crash cushion protection, other than sand filled modules, shall be provided at fixed objects and at approach ends of temporary railing. The specific type of crash cushion shall be as shown on the project plans or as specified in the Special Provisions, or if not shown on the project plans or specified in the Special Provisions, shall be as approved by the Engineer.
- Approach speeds indicated conform to NCHRP 350 Report criteria.
- Use of pallets is optional.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**TEMPORARY CRASH CUSHION,  
SAND FILLED  
(SHOULDER INSTALLATIONS)**

NO SCALE

RSP T2 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN T2  
DATED MAY 1, 2006 - PAGE 213 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP T2**

2006 REVISED STANDARD PLAN RSP T2

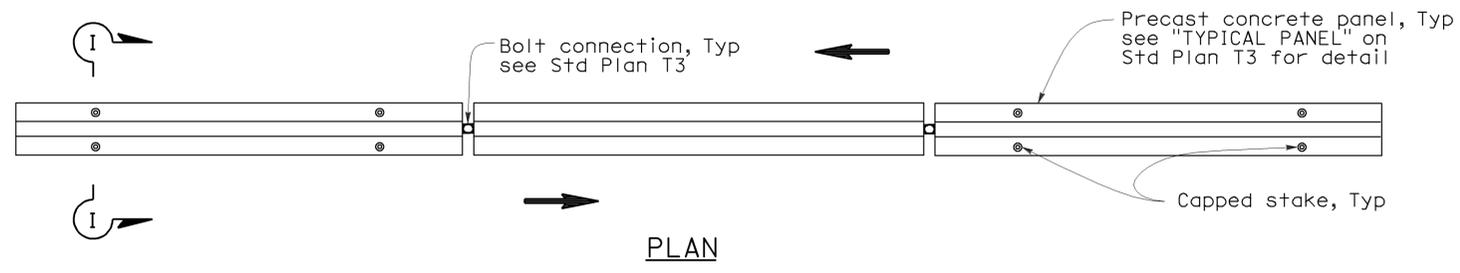
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	99	R43.9/49.3	13	17

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

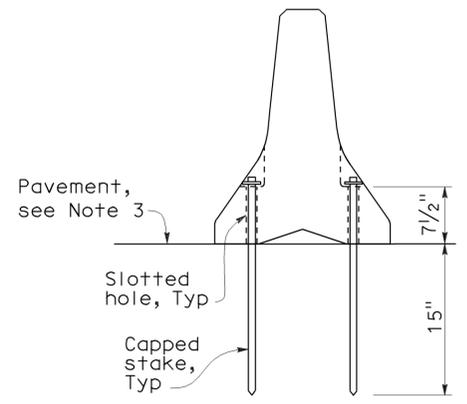
May 20, 2011  
PLANS APPROVAL DATE

*The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*

To accompany plans dated 10-31-11



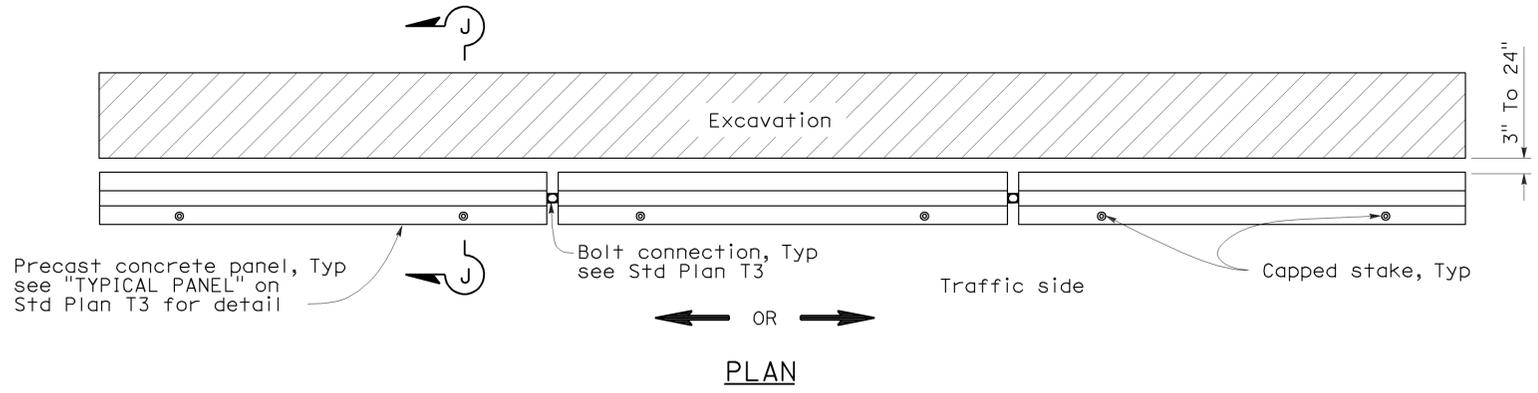
**RAILING STAKING CONFIGURATION FOR TWO-WAY TRAFFIC**  
See Note 1



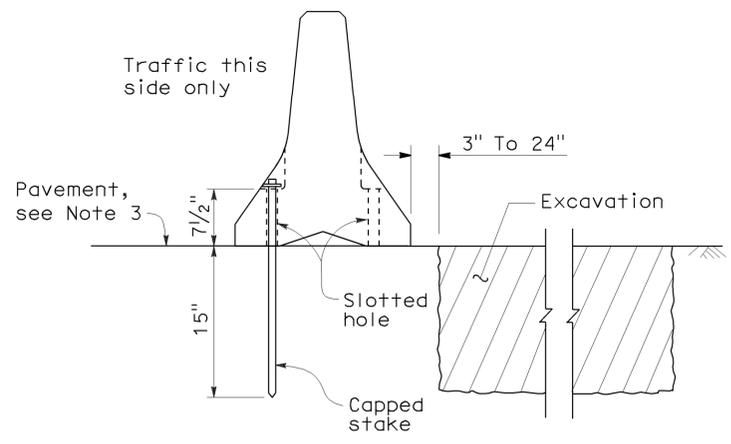
**SECTION I-I**

**NOTES:**

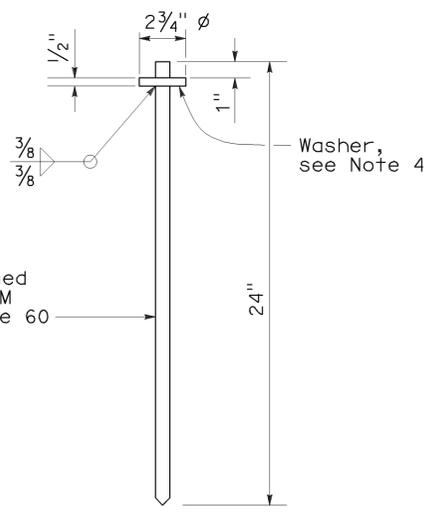
1. Where Type K Temporary Railing is placed as a temporary or long term barrier in two-way traffic on highways with less than 24" from the edge of traveled way, use four capped stakes per every other panel with end panels staked.
2. Where Type K Temporary Railing is placed 3" to 24" from the edge of an excavation on highways, use two capped stakes per panel along the traffic side.
3. Staked Type K Temporary Railing must be supported by at least 4" thick concrete, hot mix asphalt or existing asphalt concrete pavement.
4. The minimum yield strength for the washer must be 60,000 psi.
5. Direction of adjacent traffic indicated by  $\Rightarrow$ .



**RAILING STAKING CONFIGURATION ADJACENT TO AN EXCAVATION**  
See Note 2



**SECTION J-J**



**CAPPED STAKE DETAIL**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**TEMPORARY RAILING  
(TYPE K)**  
NO SCALE

NSP T3A DATED MAY 20, 2011 SUPPLEMENTS  
THE STANDARD PLANS BOOK DATED MAY 2006.

2006 NEW STANDARD PLAN NSP T3A

# ELECTROLIERS

STANDARD TYPES		
15, 15D		High mast light pole
15 STRUCTURE		Double Arm lighting standard
21, 21D STRUCTURE		Existing electrolier
30		Electrolier foundation (Future installation)
31		
32		
35		
36-20A		

**NOTES:**

- Luminaires shall be 310 W HPS when installed on Type 21, 21D, 30, 31, 32, 35 and 36-20A Standards, unless otherwise specified. Luminaires shall be 200 W HPS when installed on other type standards or poles, unless otherwise specified.
- Luminaires shall be the cutoff type, ANSI Type III medium cutoff lighting distribution, unless otherwise specified.
- Variations noted adjacent to symbol on project plans.

- Electrolier (see project notes or project plans)
- Luminaire on wood pole

## STANDARD NOTES:

- AB** Abandon. If applied to conduit, remove conductors.
- BC** Install pull box in existing conduit run.
- BP** Pedestrian barricade, type as indicated on plan.
- CB** Install conduit into existing pull box.
- CC** Connect new and existing conduit. Remove existing conductors and install conductors as indicated.
- CF** Conduit to remain for future use. Remove conductors. Install pull wire or rope.
- DH** Detector handhole.
- FA** Foundation to be abandoned.
- IS** Install sign on signal mast arm.
- NS** No slip base on standard.
- PEC** Photoelectric control.
- PEU** Photoelectric unit.
- RC** Equipment or material to be removed and become the property of the Contractor.
- RE** Remove electrolier, fuses and ballast. Tape ends of conductors.
- RL** Relocate equipment.
- RR** Remove and reuse equipment.
- RS** Remove and salvage equipment.
- SC** Splice new to existing conductors.
- SD** Service disconnect.
- SF** Standard to remain for future use. Remove luminaire, pole conductors, fuses and ballast.
- TSP** Telephone service point.

# ABBREVIATIONS AND EQUIPMENT DESIGNATIONS

## PROPOSED EXISTING

BBS	bbs	Battery backup system
BC	bc	Bolt circle
C	C	Conduit
CCTV	cctv	Closed circuit television
CKT	ckt	Circuit
CMS	cms	Changeable message sign
DLC	dlc	Loop detector lead-in cable
EMS	ems	Extinguishable message sign
EVC	evc	Emergency vehicle cable
EVD	evd	Emergency vehicle detector
FB	fb	Flashing beacon
FBCA	fbca	Flashing beacon control assembly
FBS	fbs	Flashing beacon with slip base
FO	fo	Fiber optic
G	G	Ground (Equipment Grounding Conductor)
GFCI	GFCI	Ground fault circuit interrupt
HAR	har	Highway advisory radio
HEX	hex	Hexagonal
HPS	hps	High pressure sodium
IISNS	iisns	Internally illuminated street name sign
ISL	isl	Induction sign lighting
LED	led	Light emitting diode
LMA	lma	Luminaire mast arm
LPS	lps	Low pressure sodium
LTG	ltg	Lighting
LUM	lum	Luminaire
MAT	mat	Mast arm mounting vehicle signal faces, top attachment
MAS	mas	Mast arm mounting vehicle signal faces, side attachment
MAS-4A	mas-4A	Mast arm mounting vehicle signal faces, side attachment - 4 signal section
MAS-4B	mas-4B	
MAS-4C	mas-4C	
MAS-5A	mas-5A	Mast arm mounting vehicle signal faces, side attachment - 5 signal section
MAS-5B	mas-5B	
MC	mc	Mercury contactor
M/M	m/m	Multiple to multiple transformer
MT	mt	Conduit with pull wire or rope only
MTG	mtg	Mounting
	mv	Mercury vapor lighting fixture
N	N	Neutral (Grounded Conductor)
NC	NC	Normally closed
NO	NO	Normally open
PB	pb	Pull box
PEC	pec	Photoelectric control (Type I, II, III, IV or V as shown)
PED	ped	Pedestrian
PEU	peu	Photoelectric unit
PPB	ppb	Pedestrian push button
RL		Relocated equipment
RM	rm	Ramp metering
SB	sb	Slip base
SIC	sic	Signal interconnect cable
SIG	sig	Signal
SMA	sma	Signal mast arm
SNS	sns	Street name sign
SP	sp	Service point
TDC	tdc	Telephone demarcation cabinet
TMS	tms	Traffic monitoring station
TOS	tos	Traffic Operations System
VEH	veh	Vehicle
XFMR	xfmr	Transformer
COMM	comm	Communication
RWIS	rwis	Roadway weather information system

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Ker	99	R43.9/49.3	14	17

*Jeffery G. McRae*  
REGISTERED ELECTRICAL ENGINEER

October 5, 2007  
PLANS APPROVAL DATE

Jeffery G. McRae  
No. E14512  
Exp. 6-30-08  
ELECTRICAL  
STATE OF CALIFORNIA

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To accompany plans dated 10-31-11

## SOFFIT AND WALL MOUNTED LUMINAIRES

- Pendant, 70 W HPS unless otherwise specified.
- Flush, 70 W HPS unless otherwise specified.
- Wall surface, 70 W HPS unless otherwise specified.
- Existing soffit or wall luminaire to remain unmodified.
- Existing soffit or wall luminaire to be modified as specified.

### NOTE:

Arrow indicates "street side" of luminaire.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS  
(SYMBOLS AND ABBREVIATIONS)**

NO SCALE

RSP ES-1A DATED OCTOBER 5, 2007 SUPERSEDES STANDARD PLAN ES-1A  
DATED MAY 1, 2006 - PAGE 400 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP ES-1A**

2006 REVISED STANDARD PLAN RSP ES-1A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Ker	99	R43.9/49.3	15	17

*Jeffrey G. McRae*  
 REGISTERED ELECTRICAL ENGINEER  
 No. E14512  
 Exp. 6-30-08  
 ELECTRICAL  
 STATE OF CALIFORNIA

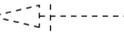
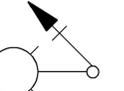
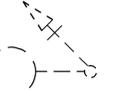
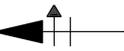
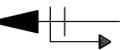
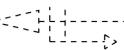
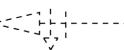
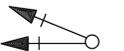
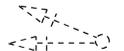
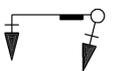
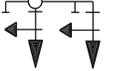
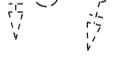
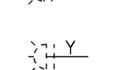
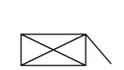
October 5, 2007  
 PLANS APPROVAL DATE

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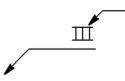
### CONDUIT

PROPOSED	EXISTING	
---	---	Lighting Conduit, unless otherwise indicated or noted
---	---	Traffic signal conduit
-C-	-c-	Communication conduit
-T-	-t-	Telephone conduit
-F-	-f-	Fire alarm conduit
-FO-	-fo-	Fiber optic conduit
---	---	Conduit termination 
		Conduit riser in/on structure or service pole

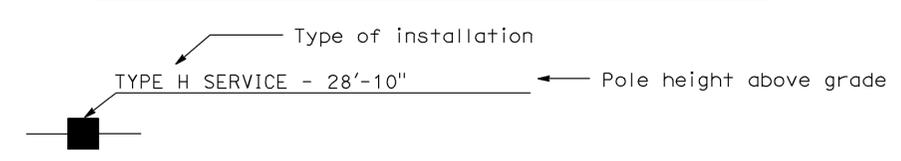
### SIGNAL EQUIPMENT

PROPOSED	EXISTING	
		Pedestrian signal face
		Pedestrian push button post
		Pedestrian barricade
		Vehicle signal face (with backplate, 3-Section: red, yellow and green)
		Vehicle signal face with angle visors
		Modifications of basic symbols: "L" indicates all non-arrow sections louvered "LG" indicates louvered green section only "PV" indicates 12" programmed visibility sections "8" indicates all 8" sections (only when specified)
		Type 15TS and Vehicle signal face
		Vehicle signal face with red, yellow and green left arrow sections
		Vehicle signal face with red and yellow sections and up green arrow
		Vehicle signal face (5 Section) with red, yellow and green sections and yellow and green right arrows
		Type 1 Standard and attached vehicle signal faces
		Standard with signal mast arm only and attached vehicle signal faces and internally illuminated street name sign
		Type 33 Standard, Left-turn vehicle signal face and sign
		Standard with luminaire and signal mast arms and attached vehicle signal faces
		Cantilever flashing beacon Type 9 Frame, with a sign unless otherwise specified or indicated
		Type 15-FBS Standard with two vehicle signal face sections with lens, backplate and visor with a sign
		Flashing beacon. One vehicle signal face section with lens, backplate and visor. "R" indicates red indication, "Y" indicates yellow indication
		Controller assembly. Door indicates front of cabinet

### SERVICE EQUIPMENT

PROPOSED	EXISTING	
---OH---	---oh---	Overhead lines
		Wood pole "U" indicates utility owned
		Pole guy with anchor
		Utility transformer - ground mounted
		Service equipment enclosure type
		Service equipment enclosure door indicates front of enclosure
		Telephone demarcation cabinet

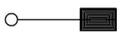
### POLE-MOUNTED SERVICE DESIGNATION



### ILLUMINATED OVERHEAD SIGN

PROPOSED	EXISTING	
		Overhead sign - Single post
		Overhead sign - Two post
		Overhead sign - Mounted on structure
		Overhead sign with electrolier

### SIGNAL EQUIPMENT Cont

PROPOSED	EXISTING	
		Guard post
		Type 1 Standard with "Meter On" sign
		Emergency Vehicle detector

### NOTES:

- All signal sections shall be 12" unless shown otherwise.
- Signal heads shall be provided with backplates unless shown otherwise.
- Signal indication shall be LED.

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS  
 (SYMBOLS AND ABBREVIATIONS)**  
 NO SCALE

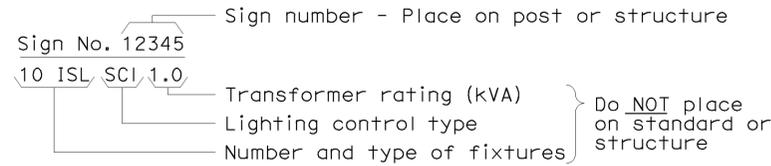
RSP ES-1B DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-1B  
 DATED MAY 1, 2006 - PAGE 401 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP ES-1B**

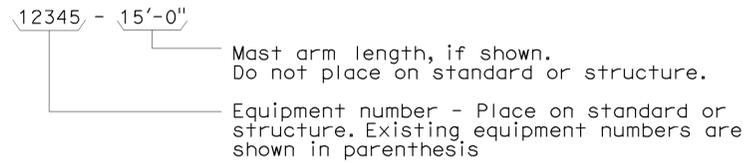
2006 REVISED STANDARD PLAN RSP ES-1B

### EQUIPMENT IDENTIFICATION

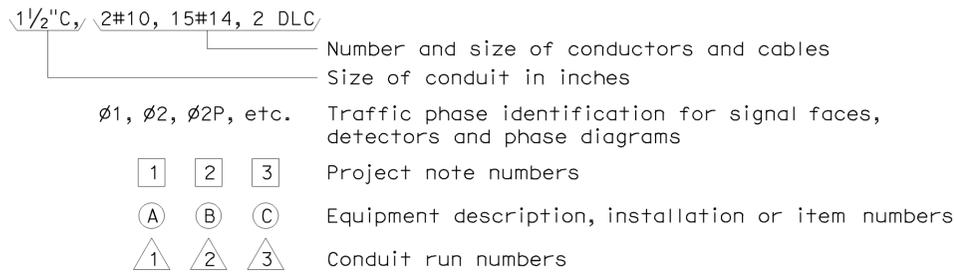
#### ILLUMINATED SIGN IDENTIFICATION NUMBER:



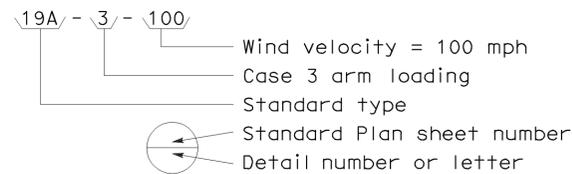
#### ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:



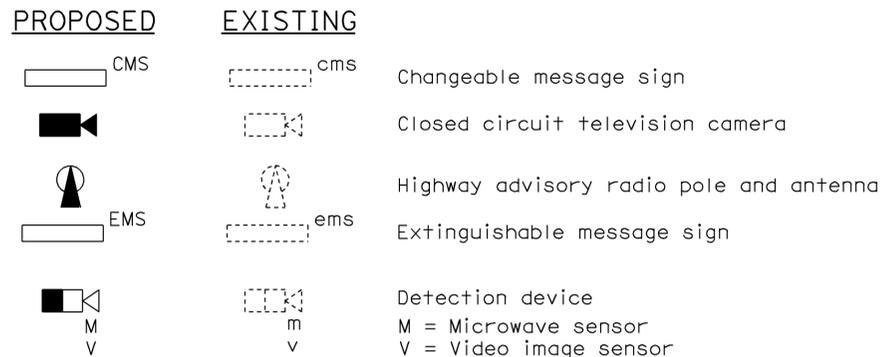
#### CONDUIT AND CONDUCTOR IDENTIFICATION:



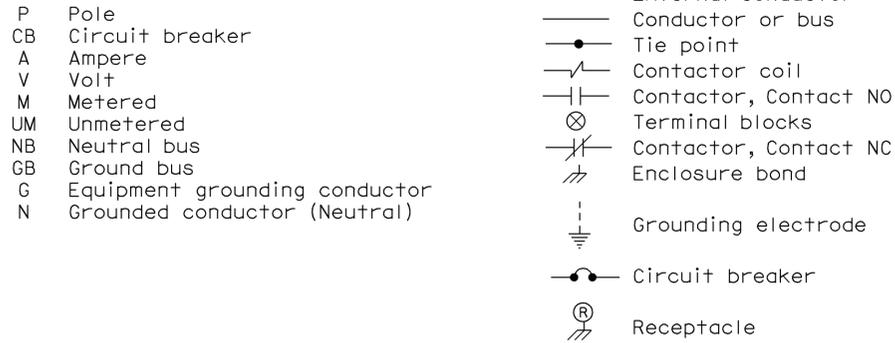
#### SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



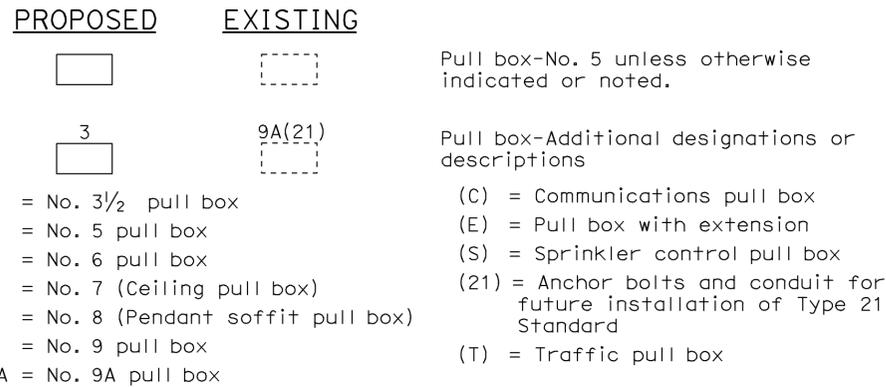
### MISCELLANEOUS EQUIPMENT



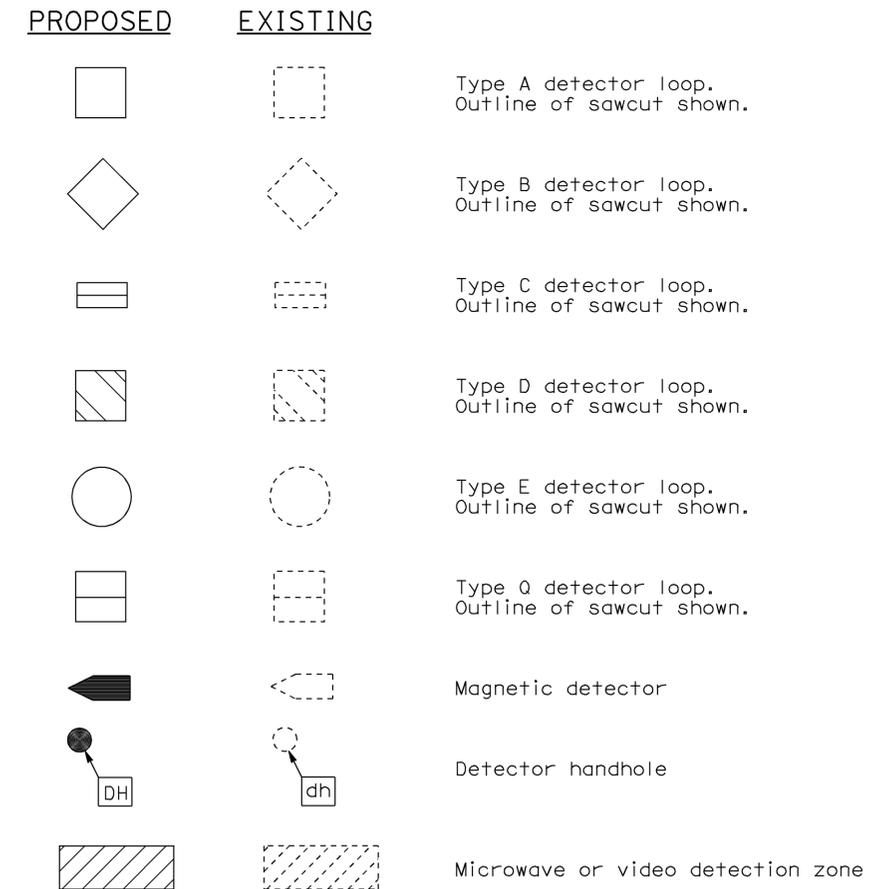
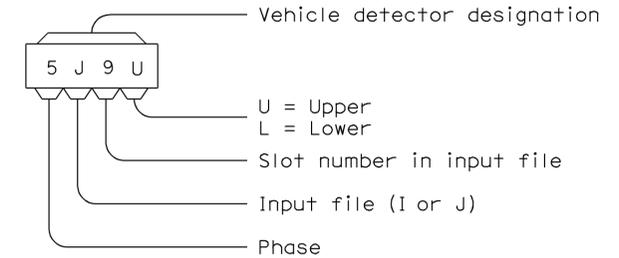
### WIRING DIAGRAM LEGEND



### PULL BOXES



### VEHICLE DETECTORS



STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

## ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

NO SCALE

RSP ES-1C DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-1C  
 DATED MAY 1, 2006 - PAGE 402 OF THE STANDARD PLANS BOOK DATED MAY 2006.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Ker	99	R43.9/49.3	17	17

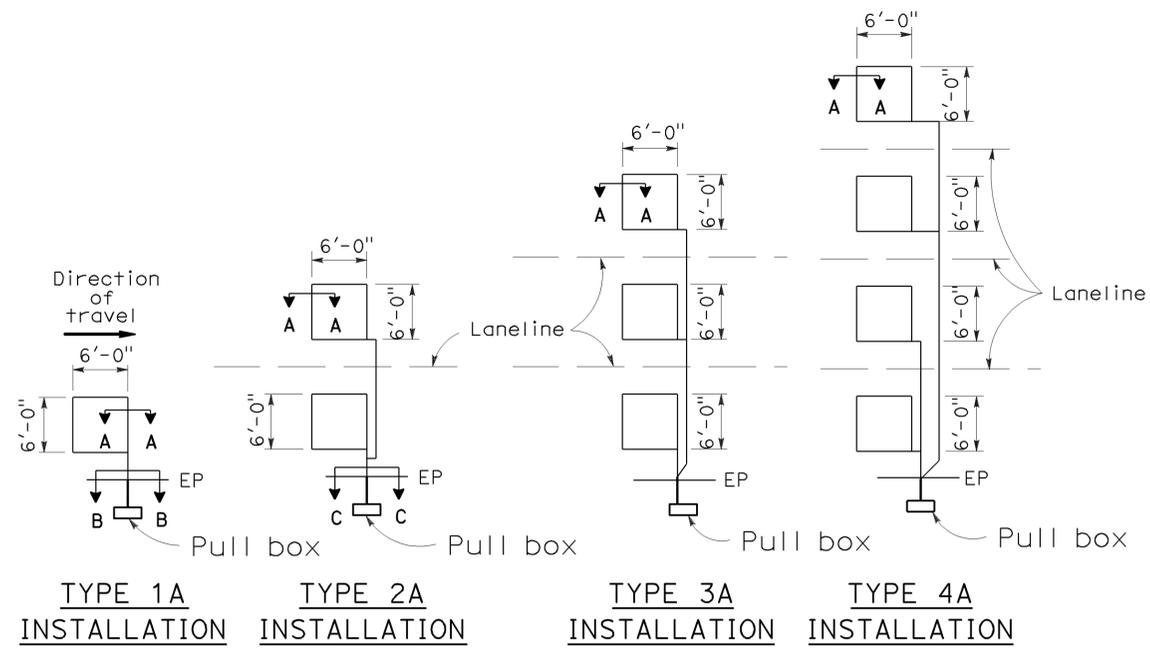
*Jeffery G. McRae*  
 REGISTERED ELECTRICAL ENGINEER  
 No. E14512  
 Exp. 6-30-08  
 ELECTRICAL  
 STATE OF CALIFORNIA

October 5, 2007  
 PLANS APPROVAL DATE

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

## LOOP INSTALLATION PROCEDURE

- Loops shall be centered in lanes.
- Saw slots in pavement for loop conductors as shown in details.
- Distance between side of loop and a lead-in saw cut from adjacent detectors shall be 2'-0" minimum. Distance between lead-in saw cuts shall be 6" minimum.
- Bottom of saw slot shall be smooth with no sharp edges.
- Slots shall be washed until clean, blown out and thoroughly dried before installing loop conductors.
- Adjacent loops on the same sensor unit channel shall be wound in opposite directions.
- Identify and tag loop circuit pairs in the pull box with loop number, start (S) and finish (F) of conductor. Identify and tag lead-in-cable with sensor number and phase.
- Install loop conductor in slot using a 3/16" to 1/4" thick wood paddle. Hold loop conductors with wood paddles (at the bottom of the sawed slot) during sealant placement.
- No more than 2 twisted pairs shall be installed in one sawed slot.
- Allow additional 5'-0" of slack length of conductor for the lead-in run to pull box.
- The additional length of each conductor for each loop shall be twisted together into a pair (6 turns per 3'-4" minimum) before being placed in the slot and conduit leading to pull box.
- Test each loop circuit for continuity, circuit resistance and insulation resistance at the pull box before filling slots.
- Fill slots as shown in details.
- Splice loop conductors to lead-in-cable. Splices shall be soldered.
- End of lead-in-cable and Type 2 loop conductor shall be waterproofed prior to installing in conduit to prevent moisture from entering the cable.
- Lead-in-cable shall not be spliced between the pull box and the controller cabinet terminals.
- Test each loop circuit for continuity, circuit resistance and insulation resistance at the controller cabinet location.
- Where loop conductors are not to be spliced to a lead-in-cable, the ends of the conductors shall be taped and waterproofed with electrical insulating coating.



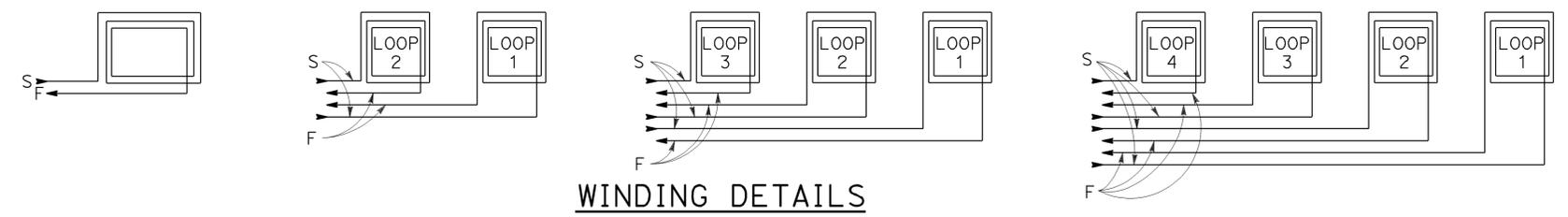
TYPE 1A INSTALLATION TYPE 2A INSTALLATION TYPE 3A INSTALLATION TYPE 4A INSTALLATION

### SAWCUT DETAILS

- (Type A loop detector configurations illustrated)
- 1A thru 4A = 1 Type A loop configuration in each lane.
  - 1B thru 4B = 1 Type B loop configuration in each lane.
  - 1C = 1 Type C loop configuration entering lanes as required.
  - 1D thru 4D = 1 Type D loop configuration in each lane.
  - 1E thru 4E = 1 Type E loop configuration in each lane.
  - 1Q thru 4Q = 1 Type Q loop configuration in each lane.
- (Use Type A, B, C, D, E or Q loop detector configurations only when specified or shown on plans)

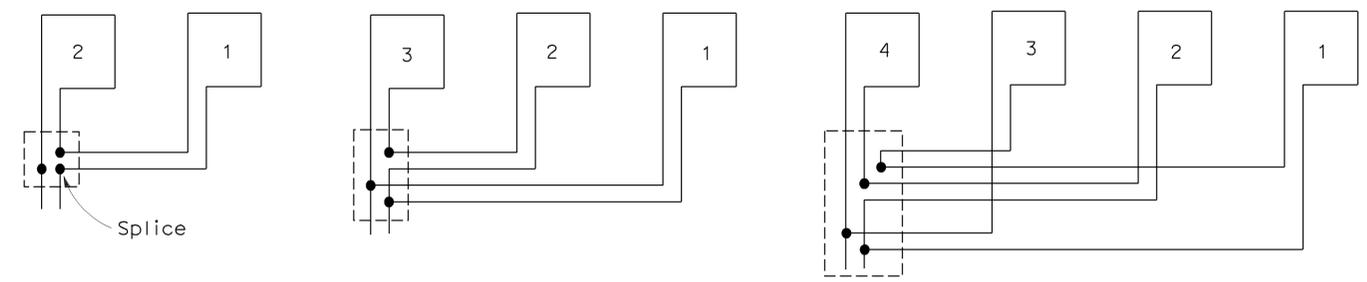
To accompany plans dated 10-31-11

2006 REVISED STANDARD PLAN RSP ES-5A



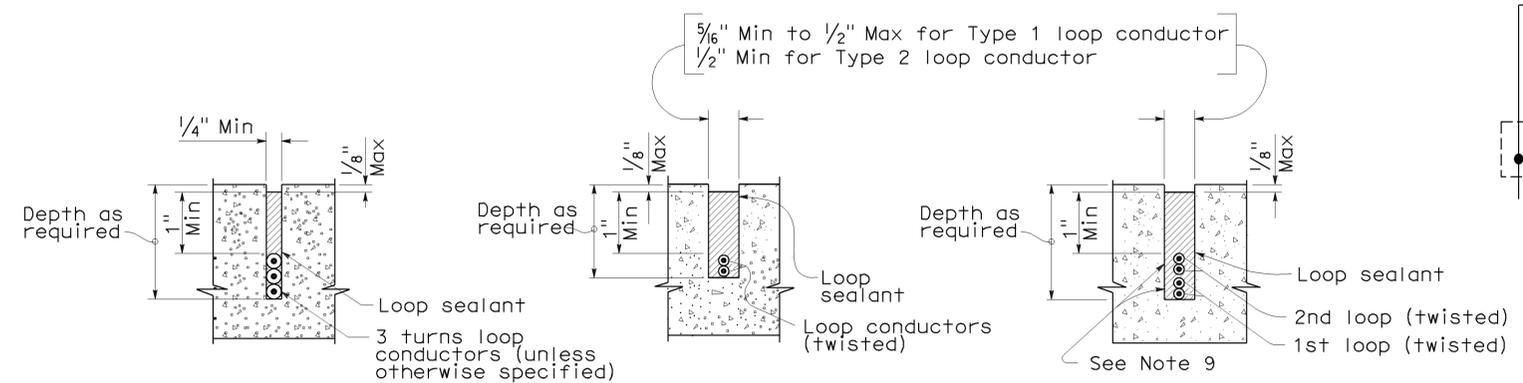
### WINDING DETAILS

See Notes 6 and 7



### TYPICAL LOOP CONNECTIONS

(Dashed lines represent the pull box)



SECTION A-A SECTION B-B SECTION C-C  
SLOT DETAILS - TYPE 1 AND TYPE 2 LOOP CONDUCTOR

## ELECTRICAL SYSTEMS (DETECTORS)

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

NO SCALE

RSP ES-5A DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-5A  
DATED MAY 1, 2006 - PAGE 423 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP ES-5A**